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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/758,780

01/15/2004

Ohmyoung Kwon

4366-040026

6305

28289

7590

02/07/2005

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EXAMINER

MACK, COREY D

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/758,780

Applicant(s)

KWON ET AL.

Examiner

Corey D. Mack

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-11 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubisiak, et al. (US 6,223,593).

A. With respect to Claim 1, Kubisiak discloses a flowmeter comprising: a resistive heater 668 to be inserted into a fluid; Alternating Current (AC) power with a first frequency to periodically heat the resistive heater (column 10, line 45 – column 12, line 38; column 16, line 54 – column 18, line 27); a signal processing unit 608, 610 for detecting a first signal generated in the resistive heater in relation to a temperature variation of the resistive heater by the AC power, and obtaining a phase lag of the first signal relative to the heat generation in the resistive heater; and, an operation unit 620, 626 for calculating a flow rate of the fluid based on the obtained phase lag (column 4, lines 7-29; column 17, line 31 – column 18, line 27).

B. With respect to Claim 2, Kubisiak discloses a first detecting unit 606 for detecting a voltage signal from the resistive heater, wherein the signal processing unit 608, 610 detects the first signal from an output of the first detecting unit.

C. With respect to Claims 4 and 11, Kubisiak discloses that the first signal has a second frequency that is twice as large as the first frequency (column 17, lines 31-43).

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D. With respect to Claim 5, Kubisiak discloses that the resistive heater is a metallic material (column 8, lines 36-47).

E. With respect to Claims 6, 9 and 10, Kubisiak discloses a memory unit 620 for storing phase lag data between the first signal and the heat generation in the resistive heater and flow rate data corresponding to the phase lag data, which are mapped to each other; and, a microprocessor 626 for calculating the flow rate of the fluid based on the correspondence between the obtained phase lag data of the first signal and the data stored in the memory unit (column 17, line 44 – column 18, line 14).

F. With respect to Claim 7, Kubisiak discloses that the microprocessor controls 624 the frequency f of the AC power.

G. With respect to Claim 8, Kubisiak discloses that the signal processing unit comprises a lock-in amplifier 612.

Allowable Subject Matter

3. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 3 January 2005 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., no requirement of using additional sensors, as well as a heater element) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations

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from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Next, Applicant argues that the cited prior art, Kubisiak, does not teach or suggest calculating flow rate of a fluid from time lag. However, Kubisiak does teach that flow rate is calculated by using stored calibration information related to frequency of oscillation (time or phase lag). Further, Applicant argues that the phase lag or time lag between the heater-input signal and the temperature response is used as an error and not to determine flow rate. However, this is only one use of the signal to insure a more accurate time delay measurement. As discussed above, the phase lag is also used to determine the flow rate by using a calibration procedure.

Finally, Applicant argues that the phase shifter and amplifier of Kubisiak are not equivalent to the signal processing unit of the present application. However, the phase shifter 608 and amplifier 610 in conjunction with previously indicated processor 620, 626 perform all the functions of the claimed invention, as indicated in the rejection above. Hence, Kubisiak performs all the limitations of the claimed invention. Therefore, the rejection stands.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey D. Mack whose telephone number is (571) 272-2181. The examiner can normally be reached on M-F, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CDM

Corey D. Mack, Esq.
Patent Examiner
Art Unit 2855

January 25, 2005


EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800